

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hiroyuki KANBARA et al.  Application No.: 10/596,000  Confirmation No.: 1561  Filing or 371(c) Date: January 17, 2007  Title: METHOD FOR FORMING THICK FILM PATTERN, METHOD FOR MANUFACTURING ELECTRONIC COMPONENT AND PHOTOLITHOGRAPHIC PHOTOSENSITIVE PASTE	Art Unit: 1795  Examiner: A. Eoff
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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated July 14, 2009, please consider Applicant's arguments and remarks concerning the rejection issued in the Office Action dated July 14, 2009. Applicant has filed a Notice of Appeal with this Pre-Appeal Brief Request for Review.

Claims 20, 22-29, 31, and 33-36 are pending in this application.

Claims 20, 22-25, 27, 29, 31, and 33-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Oshio et al. (U.S. 2002/0164542). Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Oshio et al. in view Iguchi et al. (U.S. 6,197,480). Applicant respectfully traverses the rejections of Claims 20, 22-29, 31, and 33-36.

Claim 20 recites:

A method for forming a thick film pattern, comprising the steps of:  
**applying to a support a photosensitive paste including a conductive powder**, a photosensitive monomer, a photopolymerization initiator, and a polymer, wherein a ratio of the photosensitive monomer to a total amount of

the photosensitive monomer and the polymer satisfies the condition represented by the following Formula:

photosensitive monomer/(photosensitive monomer + polymer)  $\geq$  0.86,  
so as to form a photosensitive paste film;  
subjecting the photosensitive paste film to an exposure treatment; and  
developing the photosensitive paste film subjected to the exposure treatment so as to form a thick film pattern; wherein

**the contents of the conductive powder, the photosensitive monomer, and the photopolymerization initiator constituting the photosensitive paste are within the following ranges:**

**conductive powder: about 60 to about 90 percent by weight of the photosensitive paste;**

photosensitive monomer: about 5 to about 39 percent by weight of the photosensitive paste; and

photopolymerization initiator: about 1 to about 10 percent by weight of the photosensitive paste. (emphasis added)

Applicant's Claim 31 recites features that are similar to the features recited in Applicant's Claim 20, including the above-emphasized features.

The Examiner alleged that Oshio et al. teaches an inorganic powder, wherein the powder may be powdered metal, such as iron, nickel, palladium, tungsten, copper, aluminum, silver, gold, and platinum; that the powdered metal of Oshio et al. is equivalent to the conductive powder recited in Applicant's Claims 20 and 31; and that Oshio et al. teaches a paste comprising 65 to 90 parts by weight of the inorganic powder.

However, the inorganic powder of Oshio et al. is specifically disclosed as being a component of **an insulating paste** (see, for example, paragraph [0026] of Oshio et al.), wherein the powder may include some small undisclosed amount of powdered metal (see, for example, paragraph [0022] of Oshio et al.). However, the inorganic powder of Oshio et al. clearly cannot include a conductive powder that is about 60 to about 90 percent by weight of the insulating paste as recited in Applicant's Claims 20 and 31. If a conductive powder of Oshio et al. were included within the range of about 60 to about 90 percent by weight of the insulating paste, then the insulating paste of Oshio et al. would no longer be suitable for its intended purpose of providing insulation. Instead, the paste of Oshio et al. would necessarily be conductive since the paste would be primarily composed of powdered metal.

The Examiner is reminded that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) and MPEP § 2143.01.

In the Response to Arguments section on pages 9 and 10 of the Office Action dated July 14, 2009, the Examiner alleged:

[T]here is no teaching in Oshio et al. that the “powder include some small amount of powdered metal”... Paragraph 0022 of Oshio et al. teach “The inorganic powder which can be used in the present invention is not particularly limited as long as it is transparent to light used for exposure” and further includes “powdered metals, such as iron, nickel, tungsten, copper, palladium, aluminum, silver, gold and platinum” as the inorganic powder.

The powdered metals are equivalent to the electrically conductive powder of the instant application, as taught at the bottom of page 17 of the specification.

Also, Oshio et al. teach in par. 0026 that the paste composition should comprise between 65 and 90 parts by weight of the inorganic powder per 100 parts of the total composition.

There are no limitations regarding the amounts of metal powder used in the composition.

The only limitations are concerning the transparency of the composition, such as the teachings in par. 0022: “The inorganic powder which can be used in the present invention is not particularly limited as long as it is transparent to light used for exposure” and “it is desirable that the inorganic powder be free of silicon oxide, aluminum oxide or titanium oxide. Presence of these impurities reduced light transmittance.”

As Oshio et al. clearly teach that powdered metals such as iron, nickel, tungsten, copper, palladium, aluminum, silver, gold and platinum as the inorganic powder (par. 0022) and further teach that the paste composition should comprise between 65 and 90 parts by weight of the inorganic powder per 100 parts of the total composition (par. 0026), it would have been obvious to one of ordinary skill in the art to obtain a paste composition comprising between 65-90 parts by weight of powdered metal.

The paste of Oshio et al. is equivalent to the photosensitive paste of the instant application.

From the Examiner’s allegations, it appears that the Examiner is interpreting Oshio et al. as teaching that the inorganic powder could be composed solely or primarily of powdered

metal, which would produce a paste composition that includes 65 to 90 parts by weight of powdered metal. Applicant respectfully disagrees.

Although, as alleged by the Examiner, Oshio et al. may not explicitly limit the amounts of powdered metal used in the composition, since the paste of Oshio et al. is and must be an insulating paste, Oshio et al. certainly inherently limits the amount of powdered metal included in the insulating paste composition to an amount small enough so as to ensure that the paste of Oshio et al. is insulative and **not** conductive.

The Examiner has failed to explain how a photosensitive paste composition that includes 65 to 90 parts by weight of powdered metal could possibly define a photosensitive **insulating** paste, as that disclosed in Oshio et al. As noted above, if the photosensitive paste composition of Oshio et al. included 65 to 90 parts by weight of powdered metal, then the photosensitive paste would necessarily be **conductive** and could not possibly be insulative. Thus, one of ordinary skill in the art would clearly understand from the entire disclosure of Oshio et al. that the photosensitive insulating paste of Oshio et al. includes in inorganic powder that, at most, includes some small undisclosed minor amount of powdered metal.

Applicant respectfully submits that the Examiner has mischaracterized and ignored the overall teachings of the disclosure and all of other parts of Oshio et al., and instead has focused only on the description in paragraphs [0022] and [0026] of Oshio et al. Even if one were to focus only on the description in paragraphs [0022] and [0026] of Oshio et al. as the Examiner appears to have done, one of ordinary skill in the art would recognize that paragraph [0022] of Oshio et al. merely describes examples of powdered metals that could be used in the insulating paste disclosed and claimed in Oshio et al.

There is absolutely no disclosure or suggestion in Oshio et al. that the paste could be conductive, which it would inherently be if the paste of Oshio et al. included 65 to 90 parts by weight of powdered metal, or anything other than insulating. Further, to interpret Oshio et al. as teaching or suggesting that powdered metal could be included in amounts that are large enough (e.g., 65 to 90 parts by weight of the overall composition of the paste of Oshio et al.) to make the paste conductive completely ignores the clear teachings of Oshio et al. (e.g., the

object of the invention and all claims recite an insulating paste) and renders the invention of Oshio et al. unsuitable for its intended purpose.

The Examiner is reminded that it is impermissible within the framework of § 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. In re Wesslau, 353 F.2d 238, 241, 147 USPQ 391 (CCPA 1965).

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 20 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Oshio et al.

In view of the foregoing remarks, Applicant respectfully submits that Claims 20 and 31 are allowable. Claims 22-29 and 33-36 depend upon Claims 20 and 31, and are therefore allowable for at least the reasons that Claims 20 and 31 are allowable.

In view of the foregoing remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Dated: September 29, 2009

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